



The National Institutes of Health Pediatric Concussion Workshop

Bethesda North Marriott Hotel & Conference Center
October 13-14, 2016

Day 1: October 13, 2016

7:30 am **Registration**

8:00 am **Welcome**

Walter Koroshetz, MD, NIH/NINDS

8:15 am **Patient Perspective**

Victoria (Tori) Bellucci, Student and former All-Met High School Soccer Player

8:25 am **Summary of IOM Report**

Fred Rivara, MD, Seattle Children's Research Institute

8:55 am **Session I: What Is a Concussion?**

Moderator: Ramona Hicks, PhD, One Mind for Research

20 min presentations and 40 min Panel Q&A Session

- Terminology – Semantics of Concussion
Jonathan Mink, MD, PhD, University of Rochester
- Incidence & Prevalence – Surveillance System
Dawn Comstock, PhD, Colorado School of Public Health
- Biomechanics – biosensors, strain, measurement of dosing
Susan Margulies, PhD, University of Pennsylvania

10:00 am **Break (15 minutes)**

- Symptoms, Pathology and Heterogeneity -- Sub-Acute Symptoms, Post-Concussion Syndrome
Harvey Levin, PhD, Baylor College of Medicine
- Biology of Concussion: Diffuse Axonal Injury, Energy Crisis, and Autonomic Function
Douglas Smith, MD, University of Pennsylvania

11:00 am **Panel Discussion**

11:45 am **Lunch (1 hour)**

12:45 pm **Session II: Developmental Considerations for Studying Concussion in Youth**

Moderator: Ruth Brenner, MD, MPH, NIH/NICHD

15 min presentations and 15 min Panel Q&A Session

- Neurodevelopment & Connectivity
Jay Giedd, MD, University of California, San Diego
- Cognitive Development
Robert Asarnow, PhD, University of California, Los Angeles
- Psychosocial & Mood Development
Grant Iverson, PhD, Harvard Medical School
- Methods for Assessing Changes in Developmental Trajectory
Linda Ewing-Cobbs, PhD, University of Texas Health Science Center, Houston

1:50 pm **Panel Discussion**

2:05 pm **Break (15 min)**

2:20 pm **Session III: Diagnostic Markers of Concussion in Children**

Moderator: Mary Ellen Michel, PhD, NIH/NICHD/NCMRR

15 min presentations and 15 min Panel Q&A Session

- Symptom Presentation by Age – How Do Kids Describe Concussion?
Gerry Gioia, PhD, Children's National Health System
- Age-Appropriate Assessment Tools
Keith Yeates, PhD, University of Calgary
- The Potential of Age-Appropriate Biofluid Imaging
Christopher Giza, MD, University of California, Los Angeles
- Devices and the Effect of Developmental Trajectory
Uzma Samadani, MD, PhD, University of Minnesota

3:25 pm **Panel Discussion**

3:40 pm **Break (15 min)**

3:55 pm **Session IV: Prognostic Markers of Concussion in Children**

Moderator: Patrick Bellgowan, PhD, NIH/NINDS

15 min presentations and 15 min Panel Q&A Session

- Dosing of Head Hits and Prior Concussions
Stefan Duma, PhD, Virginia Tech
- Predictive markers for persistent post-concussion symptoms
Roger Zemek, MD, Children's Hospital of Eastern Ontario
- Prognostic Biomarkers and Genetic Markers
Rebekah Mannix, MD, MPH, Boston Children's Hospital
- Sex Differences
Tracey Covassin, PhD, Michigan State University

5:00 pm **Panel Discussion**

5:30 pm **Adjourn**

Day 2: October 14, 2016

8:00 am **Summary of Day 1**

Jonathan Mink, MD, PhD, University of Rochester

8:30 am **Patient Advocacy Perspective**

Robert Gfeller, Executive Director, Childress Institute for Pediatric Trauma

9:00 am **Session V: Acute Management of Concussion**

Moderator: Valerie Maholmes, PhD, NIH/NICHD/PTCIB

15 min presentations and 15 min Panel Q&A Session

- Point of Injury Identification
Christina Master, MD, The Children's Hospital of Philadelphia
- General Management of Acute Concussion
Stacey Suskauer, MD, Kennedy Krieger Institute
- Risk Management / Second Impact Syndrome
Kevin Guskiewicz, PhD, University of North Carolina
- What Is "Rest"?
Bill Meehan, MD, The Micheli Center for Sports Injury Prevention

10:10 am	Panel Discussion
10:25 am	Break (15 min)
10:40 am	<u>Session VI:</u> Management of Persistent Concussion Symptoms Moderator: Alison Cernich, PhD, NIH/NICHD/NCMRR 15 min presentations and 15 min Panel Q&A Session <ul style="list-style-type: none"> Differential Diagnosis of Post-concussion Symptoms <i>Howard Goodkin, MD, PhD, University of Virginia</i> Symptom-based Treatments <i>Isabelle Gagnon, PhD, McGill University</i> Role of Schools and Academic Accommodation <i>Karen McAvoy, PsyD, Rocky Mountain Hospital for Children</i> Decisions Regarding RTP Following Repeat Injury <i>Gary Solomon, PhD, Vanderbilt University</i> Multidisciplinary Approach to Treatment <i>Michael McCrea, PhD, Medical College of Wisconsin</i>
12:00 pm	Panel Discussion
12:15 pm	Lunch (1 hour)
1:15 pm	<u>Session VII:</u> Leveraging Existing Resources Moderator: Patrick Bellgowan, PhD, NIH/NINDS 10 min presentations and 5 min Q&A Session <ul style="list-style-type: none"> DoD/NCAA CARE Consortium <i>Thomas McAllister, MD, Indiana University School of Medicine</i> NIH's Adolescent Brain Cognitive Development (ABCD) Study <i>Susan Weiss, PhD, NIH/NIDA</i> NIH's TRACK-TBI Pediatrics (Pediatric CDE development) <i>Tina Duhaime, MD, Massachusetts General Hospital</i> CDC's Concussion Surveillance Program <i>Matt Breiding, PhD, CDC/Division of Unintentional Injury Prevention</i>
2:20 pm	Transition to Breakout Groups
2:30 pm	<u>Session VIII:</u> Prioritization of Research Needs: Breakout Sessions Closed Session
4:00 pm	Transition Back to Main Conference Room (White Flint Amphitheater)
4:15 pm	<u>Session IX:</u> Prioritization of Research Needs: Breakout Sessions Report Back
5:00 pm	Summary & Closing <i>Jonathan Mink, MD, PhD, University of Rochester Medical Center</i> <i>Walter Koroshetz, MD, NIH/NINDS</i>
5:30 pm	Adjourn